CLAIMS

What is claimed is:

1. A rotary edging wheel for rough cutting of an optical lens, comprising:

a hub portion operable for attachment to a rotary power source;

an outer circumferential rough cutting surface having a width, said surface including an abrasive grit attached thereto, wherein said abrasive grit is operable for rough cutting of the optical lens; and

at least one pair of substantially adjacent swarf clearing grooves formed in said surface, comprising:

a first swarf clearing groove extending at an angle across said surface; and

a second swarf clearing groove extending at an angle across said surface;

wherein said first and second swarf clearing grooves are angled either towards each other or away from each other and extend continuously across said surface.

2. The invention of claim 1, further comprising a plurality of pairs of substantially adjacent swarf clearing grooves formed in said surface.

3. The invention of claim 1, wherein each groove has an angle of from about 10 degrees to about 80 degrees.

4. The invention of claim 1, wherein each groove has an angle of from about 15 degrees to about 65 degrees.

5. The invention of claim 1, wherein each groove has an angle of from about 35 degrees to about 45 degrees.

6. The invention of claim 1, wherein said abrasive grit is attached to the wheel by brazing, electroplating, sintering or resin bonding.

7. The invention of claim 1, wherein said abrasive grit is comprised of diamond hardness grit.

8. A rotary edging wheel for rough cutting of an optical lens, comprising:

a hub portion operable for attachment to a rotary power source;

an outer circumferential rough cutting surface having a width, said surface including an abrasive grit attached thereto, wherein said abrasive grit is operable for rough cutting of the optical lens;

a first pair of substantially adjacent swarf clearing grooves formed in said surface, comprising first and second substantially parallel swarf clearing grooves extending at an angle across said surface; and

a second pair of substantially adjacent swarf clearing grooves formed in said surface, comprising third and fourth substantially parallel second swarf clearing grooves extending at an angle across said surface;

wherein said first and second pairs of swarf clearing grooves are angled either towards each other or away from each other and extend continuously across said surface.

9. The invention of claim 8, further comprising a plurality of pairs of substantially adjacent swarf clearing grooves formed in said surface.

10. The invention of claim 8, wherein each groove has an angle of from about 10 degrees to about 80 degrees.

11. The invention of claim 8, wherein each groove has an angle of from about 15 degrees to about 65 degrees.

12. The invention of claim 8, wherein each groove has an angle of from about 35 degrees to about 45 degrees.

13. The invention of claim 8, wherein said abrasive grit is attached to the wheel by brazing, electroplating, sintering or resin bonding.

14. The invention of claim 8, wherein said abrasive grit is comprised of diamond hardness grit.

15. A rotary edging wheel for polishing of an optical lens, comprising:

a hub portion operable for attachment to a rotary power source;

an outer circumferential cutting surface having a width, said surface including an abrasive grit attached thereto, wherein said abrasive grit is operable for polishing of the optical lens; and

at least one pair of substantially adjacent swarf clearing grooves formed in said surface, comprising:

a first swarf clearing groove extending at an angle across said surface; and

a second swarf clearing groove extending at an angle across said surface;

wherein said first and second swarf clearing grooves are angled either towards each other or away from each other and extend continuously across said surface.

16. The invention of claim 15, further comprising a plurality of pairs of substantially adjacent swarf clearing grooves formed in said surface.

17. The invention of claim 15, wherein each groove has an angle of from about 10 degrees to about 80 degrees.

18. The invention of claim 15, wherein each groove has an angle of from about 15 degrees to about 65 degrees.

19. The invention of claim 15, wherein each groove has an angle of from about 35 degrees to about 45 degrees.

20. The invention of claim 15, wherein said abrasive grit is attached to the wheel by brazing, electroplating, sintering or resin bonding.

21. The invention of claim 15, wherein said abrasive grit is comprised of diamond hardness grit.

22. A rotary edging wheel for polishing of an optical lens, comprising:

a hub portion operable for attachment to a rotary power source;

an outer circumferential cutting surface having a width, said surface including an abrasive grit attached thereto, wherein said abrasive grit is operable for polishing of the optical lens;

a first pair of substantially adjacent swarf clearing grooves formed in said surface, comprising first and second substantially parallel swarf clearing grooves extending at an angle across said surface; and

a second pair of substantially adjacent swarf clearing grooves formed in said surface, comprising third and fourth substantially parallel second swarf clearing grooves extending at an angle across said surface;

wherein said first and second pairs of swarf clearing grooves are angled either towards each other or away from each other and extend continuously across said surface.

23. The invention of claim 22, further comprising a plurality of pairs of substantially adjacent swarf clearing grooves formed in said surface.

24. The invention of claim 22, wherein each groove has an angle of from about 10 degrees to about 80 degrees.

25. The invention of claim 22, wherein each groove has an angle of from about 15 degrees to about 65 degrees.

26. The invention of claim 22, wherein each groove has an angle of from about 35 degrees to about 45 degrees.

27. The invention of claim 22, wherein said abrasive grit is attached to the wheel by brazing, electroplating, sintering or resin bonding.

28. The invention of claim 22, wherein said abrasive grit is comprised of diamond hardness grit.

29. A method for rough cutting of an optical lens, comprising:

providing an edging wheel, comprising:

a hub portion operable for attachment to a rotary power source;

an outer circumferential rough cutting surface having a width, said surface including an abrasive grit attached thereto, wherein said abrasive grit is operable for rough cutting of the optical lens; and

at least one pair of substantially adjacent swarf clearing grooves formed in said surface, comprising:

a first swarf clearing groove extending at an angle across said surface; and

a second swarf clearing groove extending at an angle across said surface;

wherein said first and second swarf clearing grooves are angled either towards each other or away from each other and extend continuously across said surface;

selectively rotating said edging wheel; and

bringing the optical lens into selective contact with said rotating edging wheel.

30. A method for rough cutting of an optical lens, comprising:

providing a rotary edging wheel, comprising:

a hub portion operable for attachment to a rotary power source;

an outer circumferential rough cutting surface having a width, said surface including an abrasive grit attached thereto, wherein said abrasive grit is operable for rough cutting of the optical lens;

a first pair of substantially adjacent swarf clearing grooves formed in said surface, comprising first and second substantially parallel swarf clearing grooves extending at an angle across said surface; and

a second pair of substantially adjacent swarf clearing grooves formed in said surface, comprising third and fourth substantially parallel second swarf clearing grooves extending at an angle across said surface and extend continuously across said surface;

wherein said first and second pairs of swarf clearing grooves are angled either towards each other or away from each other;

selectively rotating said edging wheel; and

bringing the optical lens into selective contact with said rotating edging wheel.

31. A method for polishing of an optical lens, comprising:

providing a rotary edging wheel, comprising:

a hub portion operable for attachment to a rotary power source;

an outer circumferential cutting surface having a width, said surface including an abrasive grit attached thereto, wherein said abrasive grit is operable for polishing of the optical lens; and

at least one pair of substantially adjacent swarf clearing grooves formed in said surface, comprising:

a first swarf clearing groove extending at an angle across said surface; and

a second swarf clearing groove extending at an angle across said surface;

wherein said first and second swarf clearing grooves are angled either towards each other or away from each other and extend continuously across said surface;

selectively rotating said edging wheel; and

bringing the optical lens into selective contact with said rotating edging wheel.

32. A method for polishing an optical lens, comprising:

providing a rotary edging wheel, comprising:

a hub portion operable for attachment to a rotary power source;

an outer circumferential cutting surface having a width, said surface including an abrasive grit attached thereto, wherein said abrasive grit is operable for polishing of the optical lens;

a radially extending planar side portion;

a first pair of substantially adjacent swarf clearing grooves formed in said surface, comprising first and second substantially parallel swarf clearing grooves extending at an angle across said surface; and

a second pair of substantially adjacent swarf clearing grooves formed in said surface, comprising third and fourth substantially parallel second swarf clearing grooves extending at an angle across said surface;

wherein said first and second pairs of swarf clearing grooves are angled either towards each other or away from each other and extend continuously across said surface;

selectively rotating said edging wheel; and

bringing the optical lens into selective contact with said rotating edging wheel.